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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,656	08/05/2003	Hubertus Marie Jozeph Mathieu Boesten	0142-0420P	5458

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EXAMINER	
KAU, STEVEN Y	
ART UNIT	**PAPER NUMBER**
2625	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/19/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/19/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/633,656	BOESTEN, HUBERTUS MARIE JOZEPH MATHIEU	
	Examiner	Art Unit	
	Steven Kau	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *05 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8/5/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/5/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. Applicants filed a preliminary amendment on August 5, 2003

- Specification amendment has been acknowledged by examiner
- No claims have been amended, and
- Claims 1-19 are pending.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on August 5, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

However, the IDS submitted has multiple blank sheets (Sheets 2, 4, 6). Examiner suggests that label the blank sheets as "This page is kept as Blank" or remove all blank sheets from IDS to avoid any confusion.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Sharma et al (Sharma) (US 7,136,189).

With regard to claim 1, Sharma discloses a method for color rendering, in that he anticipates a method of rendering colours in a printing system using a set of colorants, including, for each colour to be rendered, a selection of a subset of colorants and for each colorant of said subset (col 6, lines 27-47), a selection of a halftone screen and a coverage fraction (e.g. fraction of pixels turned on) (Figures 2-3, col 6, lines 14-26 & col 7, lines 29-50), the method comprising steps: defining discrete colour points (e.g. compute number of ink drops and their location) in at least a portion of a colour space (col 3, lines 39-48); determining for the defined discrete colour points, different subsets of colorants and associated coverage fractions thereof, rendering each of said colour points (col 3, lines 60-67 & col 4, lines 1-11), and calculating for each of said subsets an associated graininess value (e.g. compute base level of a colorant, for instance, Magenta and textures) (col 3, lines 39-48 & col 6, lines 50-58); determining lists of colorant subsets rendering the defined discrete colour points, said lists being consistent with respect to the attribution of a halftone screen (e.g. factoring multi-level and successive filling aspects, algorithm, col 7, lines 1-24, lines 60-67 & col 8, lines 25-67) to a colorant within a subset over said portion of the colour space (col 6, 27-47, col 7 lines 60-67 & col 8, lines 25-67); and selecting one of said lists of subsets of colorants on the basis of a total graininess calculated for said lists (col 6, 27-47, col 7 lines 60-67 & col 8, lines 25-67).

With regard to claim 2, Sharma anticipates a list of colorant subsets is consistent with respect to the attribution of a halftone screen (e.g. to a colorant within a subset

over said portion of the colour space if a halftone screen associated to a colorant in a subset rendering a first colour point is associated to the same said colorant, if present, in a subset rendering a neighboring colour point of said first colour point (col 7, lines 51-67 & col 8, lines 25-67).

With regard to claim 3, Sharma anticipates that a list of colorant subsets is consistent with respect to the attribution of a halftone screen to a colorant within a subset over said portion of the colour space (col 6, lines 14-26) if a halftone screen associated to a colorant in a subset rendering a first colour point is associated to the same said colorant, if present, in a subset rendering a neighboring colour point of said first colour point, and if, in the case that a same halftone screen is associated to a first colorant in a subset rendering a colour point and to a different second colorant rendering a neighbouring colour point of first said colour point, the coverage fractions of the first and second colorants are each less than a threshold coverage fraction (col 7, lines 51-67 & col 8, lines 26-67).

With regard to claim 4, Sharma anticipates that the calculated total graininess (e.g. textures) for a list is a combination of the graininess calculated for each discrete colour point of the considered portion of the colour space (col 3 lines 39-48).

With regard to claim 5, Sharma anticipates the calculated graininess for each discrete colour point of the considered portion of the colour space is a combination of the partial graininess of each colorant in the subset of colorants rendering said discrete colour point (col 3 lines 39-48, col 7, lines 60-67 & col 8, lines 26-67).

With regard to claim 6, Sharma anticipates that the selected list is the list showing the minimum calculated graininess (col 1, lines 27-42 & col 7, lines 1-25).

With regard to claim 7, Sharma anticipates that the selected list is the list showing the minimum calculated graininess (col 1, lines 27-42 & col 7, lines 1-25).

With regard to claim 8, Sharma anticipates that the selected list is the list showing the minimum calculated graininess (col 1, lines 27-42 & col 7, lines 1-25).

With regard to claim 9, Sharma anticipates that the calculated graininess for a list of colorant subsets rendering the defined discrete colour points is obtained by a mathematical model (e.g. an algorithm, col 3, lines 39-48) in which the partial graininess for a colorant in a subset rendering a colour point is a function of the coverage fraction of said colorant (col 7, lines 29-50).

With regard to claim 10, the structure elements of method claim 9 perform all steps of method claim 10. Thus claim 10 is rejected under 102(e) for the same reason discussed in the rejection of claim 9.

With regard to claim 11, the structure elements of method claim 9 perform all steps of method claim 11. Thus claim 11 is rejected under 102(e) for the same reason discussed in the rejection of claim 9.

With regard to claim 12, Sharma anticipates that the calculated graininess for a list of colorant subsets rendering the defined discrete colour points is obtained by a mathematical model in which the partial graininess for a colorant in a subset rendering a colour point is a function of the coverage fraction of said colorant (col 7, lines 29-50).

With regard to claim 13, Sharma anticipates that the calculated graininess for a list of colorant subsets rendering the defined discrete colour points is obtained by a mathematical model in which the partial graininess for a colorant in a subset rendering a colour point is a function of the coverage fraction of said colorant and wherein the selected list is the list showing the minimum calculated graininess (col 7, lines 29-50).

With regard to claim 14, the structure elements of method claim 1 perform all steps of system claim 14. Thus claim 14 is rejected under 102(e) for the same reason discussed in the rejection of claim 1.

With regard to claim 16, the structure elements of method claim 2 perform all steps of system claim 16. Thus claim 16 is rejected under 102(e) for the same reason discussed in the rejection of claim 2.

With regard to claim 17, the structure elements of method claim 3 perform all steps of system claim 17. Thus claim 17 is rejected under 102(e) for the same reason discussed in the rejection of claim 3.

With regard to claim 18, Sharma anticipates that a computer program product (e.g. an algorithm, must be implemented in to a computer-readable medium, col 3, lines 39-48) embodied on at least one computer-readable medium, for rendering colours in a printing system using a set of colorants (col 6, lines 27-47), including, for each colour to be rendered, a selection of a subset of colorants and for each colorant of said subset, a selection of a halftone screen and a coverage fraction (Figures 2-3, col 6, lines 14-26 & col 7, lines 29-50), the computer program product comprising computer-executable instructions for: defining discrete colour points in at least a portion of a colour space (col

3, lines 39-48); determining for the defined discrete colour points, different subsets of colorants and associated coverage fractions thereof, rendering each of said colour points (col 3, lines 60-67 & col 4, lines 1-11), and calculating for each of said subsets an associated graininess value (col 3, lines 39-48 & col 6, lines 50-58); determining lists of colorant subsets rendering the defined discrete colour points, said lists being consistent with respect to the attribution of a halftone screen to a colorant within a subset over said portion of the colour space (col 6, 27-47, col 7 lines 60-67 & col 8, lines 25-67); and selecting one of said lists of subsets of colorants on the basis of a total graininess calculated for said lists (col 6, 27-47, col 7 lines 60-67 & col 8, lines 25-67).

With regard to claim 19, the structure elements of method claim 4 perform all steps of computer program product claim 19. Thus claim 19 is rejected under 102(e) for the same reason discussed in the rejection of claim 4.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma et al (Sharma) (US 7,136,189) in view of Shaked et al (Shaked) (US 5,991,438).

With regard to claim 15, Sharma anticipates that a memory unit (e.g. a matrix memory, col 6, lines 14-26) wherein a list of subsets of colorants rendering the colour points, the halftone screens associated thereto and coverage fraction of the said colorants are stored in a look-up table.

Sharma differs from claim 15, in that he does not teach a look-up table.

Shaked discloses an error diffusion algorithm, in that he teaches using a look-up table.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Sharma to include using a look-up table taught by Shaked to improve color separation (col 5, lines 40-49).

Correspondence Information

1. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement is traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is (571) 270-

1120. The examiner can normally be reached on Monday to Friday, from 8:30 AM – 8:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Kau
Patent Examiner
Division: 2625
April 16, 2007

TWYLER LAMB
SUPERVISORY PATENT EXAMINER